

minutes comprise (1) a key map and (2) an orographical map of Mexico and Central America, on a scale of 1: 12,000,000 (1 inch = 189 statute miles), five (3-7) maps of portions of this area on a scale of 1: 3,000,000 (1 inch = 47.35 stat. mi.) and (8) a map of part of Guatemala showing Mr. Champion's route 1879-1881 (1 inch = 15.5 stat. mi.), all beautifully executed.

This Introductory Volume is dedicated "To My Beloved Wife, Alice Mary Godman, who has taken the deepest interest and given me much assistance and sympathy in the completion of this work," and special acknowledgment is made in the preface to Mr. G. C. Champion and Mr. A. Cant for "valuable assistance" and "very important help."

Cervophthirius crassicornis (N.) (Anoplura).

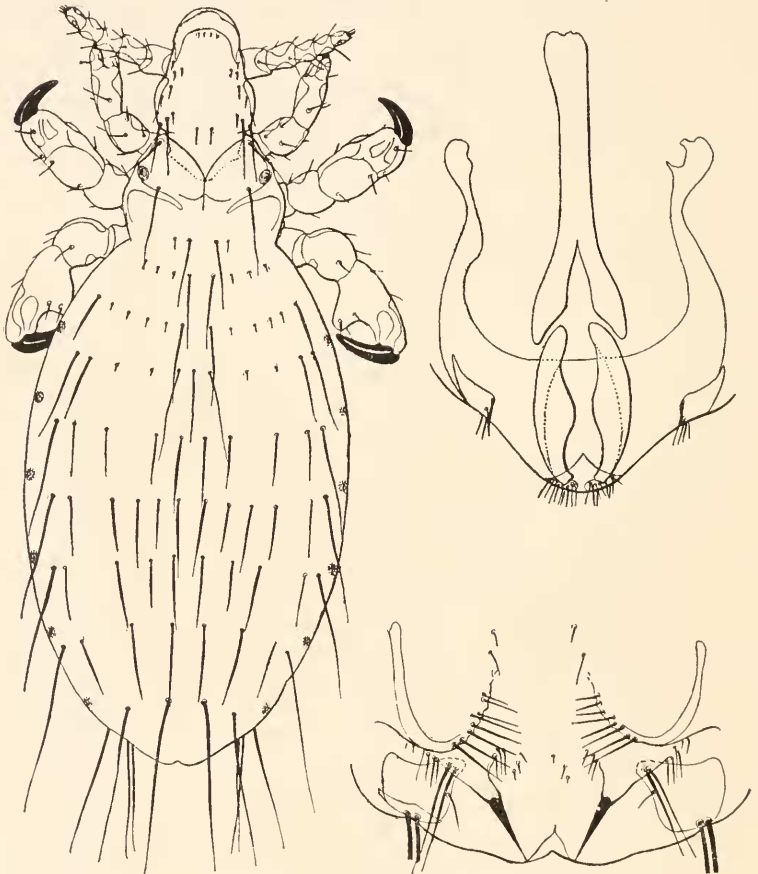
By G. F. FERRIS, Stanford University, California.

Through the kindness of Professor W. B. Herms, of the University of California, the Department of Entomology of Stanford University has recently received some specimens of an Anopluran from the black-tailed deer, *Odocoileus columbianus*, taken at Laytonville, Mendocino County, California. I regard the species as identical with one *Haematopinus crassicornis* N., which has previously been recorded only from *Cervus elaphus*, the "noble stag," of Europe, the last record being that of Giebel in *Insecta Epizoa* (1874). The rediscovery of the species in North America being a matter of some interest, I had prepared a short paper for publication and was on the point of sending this to press when there came to hand a paper which necessitates an entire readjustment of my own.

The description and figure given by Giebel leave much to be desired, but there are certain peculiarities about the species that could not well be overlooked and the identification is reasonably certain. The species has nothing to do with *Haematopinus* and I regard it merely as a rather peculiar member of the genus *Linognathus*. However, Mjöberg (*Entomologisk Tidskrift*, Vol. 36, pt. 2-4, p. 282, Dec., 1915) has established

a genus, which he calls *Cervophthirius*, for a very closely related, if indeed not the same, species taken from *Cervus tarandus* in Sweden.

This genus differs from *Linognathus* only in the sharp posterior-lateral angles of the head and in the presence of but one row of hairs on each abdominal segment. I have available for study six species of *Linognathus* and have concluded from



Cervophthirius crassicornis (N.).

Female. (Drawing made from specimen which has been cleared in caustic potash.)

(Above) Genitalia of male. Only the more heavily chitinized parts are shown.
(Below) Genitalia of female.

these, and from the illustrations of others, that the number of rows of hairs on the segments of the abdomen is hardly a suitable character upon which to split up this genus, in fact the knowledge of the genus is at present so slight that any attempt to divide it is likely to lead only to confusion. The new genus having been established, however, may be retained.

In his description of the new genus and species, Mjöberg compared them with *Solenopotes capillatus* Enderlein, a genus and species from *Bos taurus*, which were obviously based upon immature specimens. I have at hand an immature specimen of *Linognathus vituli* L., which in general appearance and in the chaetotaxy of head and abdomen agrees very closely with the description and figure of *S. capillatus*. The shape of the head does not agree, but immature specimens are very liable to distortion and are not to be too closely depended upon. The abdominal spiracles do not protrude, as they are supposed to do in *Solenopotes*, but they are disproportionately large and it is worthy of note that the figure of *L. vituli* given by Giebel in *Insecta Epizoa* indicates the abdominal spiracles as protruding. Taking all these things into consideration, I am forced to regard *Solenopotes* as a synonym of *Linognathus*, and *S. capillatus* as a synonym of *L. vituli*.

Satisfactory progress in the study of the Anoplura depends at present very largely upon the satisfactory fixing of the status of certain species which were described before the necessity for careful and full descriptions and accurate figures was fully realized, and I therefore take this opportunity to present a description and figures of *Cervophthirius crassicornis*.

The description follows. The only fully mature female available is not in satisfactory condition for measurement and this is consequently omitted.

Head about twice as long as wide. Anterior margin very roundly convex. Temporal angles moderately prominent, temporal margins nearly straight and parallel. Posterior-lateral angles sharp and prominent. Occiput much produced into the thorax. Extending across the head in front of the antennae is a conspicuous, curved, chitinized area and along each temporal margin is a narrow chitinized area. Chaeto-

taxy of the head as follows: A median group of four very small spines just behind the transverse area, four slightly larger near the base of each antenna, three along the inner edge of the chitinized area of the temporal margins, two long hairs and a short one at each posterior lateral angle and a median pair of two small hairs on the occiput. On the ventral side a single hair near the base of each antenna.

Antenna conspicuously long, the first segment longest and widest, the remainder becoming successively smaller.

Thorax shorter and considerably wider than the head and with convex lateral margins. A single long hair on each "shoulder" and one just in from each mesothoracic spiracle. Sternal plate irregularly shaped, longer than wide. Legs very large and stout, of the type common to the genus.

Abdomen elongated oval, each segment with a single row of hairs. First segment with a median group of four hairs, the outer ones very small, the inner ones quite long. Second segment with two long median hairs and with four very small hairs between each of these and the margin. Third segment with two long median hairs, four very small hairs between each of these and the margin and a long hair close to the margin. Fourth segment with three long median hairs, two very short hairs and two long hairs near each lateral margin. Five with median group of four and lateral groups of three long hairs. Six, seven and eight with median groups of five or six and lateral groups of two. Nine with five very long hairs. Chaetotaxy of ventral side very similar except that there is no row of hairs on the eighth segment.

Spiracles rather small. Gonapods blunt and rather short, each with a fringe of short hairs along its inner margin. Immediately behind each gonapod is a long sharply-pointed process with three or four hairs on each side at its base. A group of two or three long hairs at each posterior lateral angle of the ninth segment.

Description of male. Much smaller than the female and with a slightly reduced number of hairs on the abdomen, but in other respects very similar. Genitalia very heavily chitinized, the basal plate long and slender, about twice the length of the parameres. Genital plate lyriform.

Triphleps insidiosus Say Sucking Blood (Hem., Het.).

One day near the end of October, while collecting insects at White Heath, Illinois, I had the experience of being bitten by a specimen of *Triphleps insidiosus*. A companion also had the same experience. The species is well known as being of predaceous habits, but I do not recollect having seen records of it attacking man.—J. R. MALLOCH, Urbana, Ill.